REMARKS

Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

Summary of the Office Action

The title stands objected to.

Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hayashi et al.* (U.S. Patent No. 6,278,670) with the allegedly acknowledged "normalized" methodology in the "STANDARD DVD BOOK."

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hayashi et al.* in view of the "STANDARD DVD BOOK" and further in view of *Kasami et al.* (U.S. Patent No. 6,312,780).

Summary of the Response to the Office Action

Exhibit A: pages 6-7 of Standard ECMA-267 "120 mm DVD-Read-Only Disk" (http://www.ecma-international.org/publications/files/ecma-st/Ecma-267.pdf) is enclosed herewith. Applicants have proposed to amend the title by this Amendment. Claims 1 and 4 remain currently pending.

Objection to the Title

The title stands objected to. Applicants have proposed to amend the title including the phraseology of "normalized detector size" by adopting the Examiner's helpful recommendations. Accordingly, Applicants respectfully request the objection to the title be withdrawn.

Claim Rejections Under 35 U.S.C. §103(a)

Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hayashi et al.* with the allegedly acknowledged "normalized" methodology in the "STANDARD DVD BOOK." The rejection is respectfully traversed for at least the following reasons.

Exhibit A

Applicants respectfully submit, as Exhibit A, attached hereto, pages 6-7 of Standard ECMA-267 "120 mm DVD-Read-Only Disk" (http://www.ecma-international.org/publications/files/ecma-st/Ecma-267.pdf). Exhibit A is being supplied instead of the STANDARD DVD BOOK requested by the Final Office Action. Applicants note that they are unable to duplicate the STANDARD DVD BOOK because such duplication would constitute a breach of contract with other entities who are members of a group known as the DVD Forum. Nevertheless, Applicants respectfully submit that the ECMA-267 document attached as Exhibit A shows four types of Read-Only DVDs and a pickup device therefor having specific requirements in Section 9.1. Applicants respectfully submit that Section 9.1 of ECMA-267 is substantially the same as at least the portions of the STANDARD DVD BOOK believed to be relevant to the present application with respect to the normalized detector size.

Moreover, the Office Action has applied the STANDARD DVD BOOK under 35 U.S.C. §103(a). Applicants respectfully submit that in order for a reference to be properly applied under 35 U.S.C. §103, that reference must qualify as prior art under some section of 35 U.S.C. §102. Applicants respectfully submit that because they are not able to duplicate portions of the STANDARD DVD BOOK, as per contractual arrangement with the DVD Forum, the STANDARD DVD BOOK is not a publicly available document. To the extent that this rejection

might be maintained in a future Office Communication, Applicants respectfully request that the Examiner expressly point out under which section of 35 U.S.C. §102 the STANDARD DVD BOOK is believed to qualify as prior art.

Nevertheless, Applicants provide the following distinctions between the claims of the instant application and the arrangement described in the STANDARD DVD BOOK/Section 9.1 of ECMA-267. Applicants respectfully submit that the normalized detector size on the disc described in the STANDARD DVD BOOK is in a range 100 $\mu m^2 < S/M^2 < 144\ \mu m^2$, i.e., 100 $\mu m^2 < B/\beta^2 < 144\ \mu m^2$ as cited at page 11, lines 21-23 of the Specification where S denotes the total surface of a quadrant photo detector, and M denotes the transversal magnification. Although such a range of normalized detector size is allowed under the DVD Forum even for one skilled in the art, a normalized detector size in a range of 10 μm^2 to 50 μm^2 as set forth in the combination of claim 1 differs and is not obvious from the disclosure of the STANDARD DVD BOOK or ECMA-267. Accordingly, Applicants respectfully submit that the STANDARD DVD BOOK or ECMA-267 fails to teach or suggest the claimed combination as set forth in claim 1 including at least the photodetector having "a normalized detector size (B/β^2) of a size of 10 μm^2 to 50 μm^2."

Hayashi et al.

Hayashi et al. describes an optical head device usable for CD and DVD, which comprises a photodetector having photodetection areas (33, 36) having the minimum size smaller than the minimum diameter of diffracted light beam spots (30, 31) for recording and reproduction. See Figs. 2(a) and 2(b) of *Hayashi et al.* In particular, *Hayashi et al.* teaches that the minimum size of each of the photodetection areas (33, 36) is defined by its length (33a or 36a) in the x-axis,

and the minimum size of the light beam spots (30a-30c and 31a-31c) have a diameter ranging from 20 μm to 50 μm. See Fig. 3 and column 11, lines 46-67 of *Hayashi et al.* However, *Hayashi et al.* does not discuss the size of the photodetection area or the magnification of the detecting optical system. Thus, Applicants respectfully submit *Hayashi et al.* fails to teach or suggest the claimed combination as set forth in claim 1 including at least the photodetector having "a normalized detector size (B/β^2) of a size of 10 μm^2 to 50 μm^2."

M.P.E.P. §2143.03 instructs that "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." Since, in view of the above, *Hayashi et al.* and the STANDARD DVD BOOK, whether taken singly or in combination, fail to teach or suggest each and every element set forth in claim 1, it is respectfully submitted that *Hayashi et al.* in view of the STANDARD DVD BOOK does not render claim 1 unpatentable. Accordingly, withdrawal of the rejection of claim 1 under 35 U.S.C. §103(a) is respectfully requested.

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hayashi et al.* in view of the "STANDARD DVD BOOK" and further in view of *Kasami et al.* The rejection is respectfully traversed for at least the following reasons.

Applicants respectfully submit that *Kasami et al.* also fails to remedy the deficiencies of *Hayashi et al.* in view of the STANDARD DVD BOOK as discussed above. In particular, *Kasami et al.* discloses a multi-layered phase change optical recording medium which enables optimum direct overwrite even under high speed high density conditions without degrading repetition durability or storage stability of recorded signals. *Kasami et al.* merely teaches, for the information reproduction of the recording medium, that a combination of reducing the laser

wavelength and increasing the numerical aperture of the objective lens is used, i.e., a laser source having a wavelength of 400 nm and an objective lens with a numerical aperture NA of 0.85. See column 1, lines 31-40 of *Kasami et al.* However, no portion of *Kasami et al.*'s disclosure teaches or suggests a pickup device of an apparatus for recording or reproducing information in which a photodetector has a normalized detector size as recited in the claims. Thus, Applicants respectfully submit that *Kasami et al.* also fails to teach or suggest the claimed combination including at least the photodetector having "a normalized detector size (B/β^2) of a size of 10 μm^2 to 50 μm^2."

Accordingly, Applicants respectfully submit that claim 4 is allowable at least because of its dependence upon claim 1 and for the reasons set forth above, and withdrawal of the rejection of claim 4 under 35 U.S.C. §103(a) is respectfully requested.

Conclusion

In view of the foregoing, Applicants respectfully request the entry of this Amendment to place the application in clear condition for allowance or, in alternative, in better form for appeal. Applicants also respectfully request the Examiner's reconsideration and reexamination of the application and the timely allowance of the pending claims. Should there remain any questions or comments regarding this response or the application in general, the Examiner is urged to contact the undersigned at the number listed below.

Attached hereto is a marked-up version of the changes proposed by the current amendment. The attachment is captioned "Version with markings to show changes made."

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under

37 C.F.R. § 1.136 not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

MORGAN, LEWIS & BOCKIUS LLP

Dated: April 4, 2003

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8.1.2 Operating environment

This ECMA Standard requires that an optical disk which meets all mandatory requirements of this ECMA Standard in the specified test environment provides data interchange over the specified ranges of environmental parameters in the operating environment.

Disks used for data interchange shall be operated under the following conditions, when mounted in the drive supplied with voltage and measured on the outside surface of the disk.

The disk exposed to storage conditions shall be conditioned in the operating environment for at least two hours before operating.

temperature	: -25 °C to 70 °C
relative humidity	: 3 % to 95 %
absolute humidity	: 0,5 g/m^3 to 60 g/m^3
sudden change of temperature	: 50 °C max.
sudden change of relative humidity	: 30 % max.

There shall be no condensation of moisture on the disk.

8.1.3 Storage environment

The storage environment is the environment where the air immediately surrounding the optical disk shall have the following properties.

temperature	: -20 °C to 50 °C
relative humidity	: 5 % to 90 %
absolute humidity	: 1 g/m^3 to 30 g/m^3
atmospheric pressure	: 75 kPa to 106 kPa
temperature variation	: 15 °C /h max.
relative humidity variation	: 10 %/h max.

8.1.4 Transportation

This ECMA Standard does not specify requirements for transportation; guidance is given in annex P.

8.2 Safety requirements

The disk shall satisfy the requirements of Standard ECMA-287, when used in the intended manner or in any foreseeable use in an information system.

8.3 Flammability

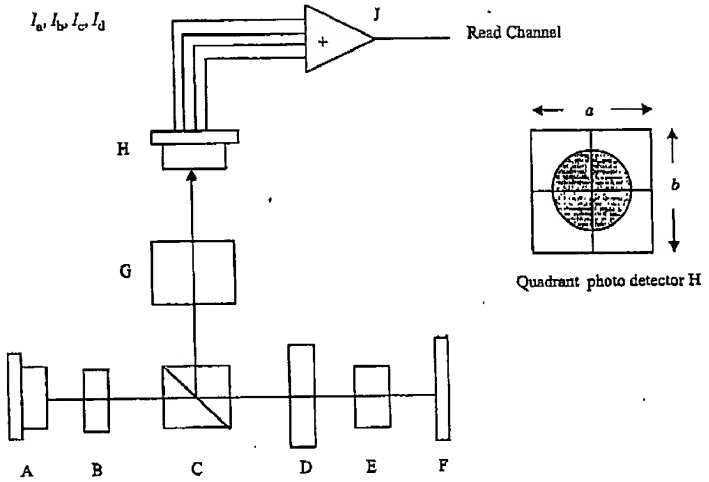
The disk shall be made from materials that comply with the flammability class for HB materials, or better, as specified in Standard ECMA-287.

9 Reference measurement devices

The reference measurement devices shall be used for the measurements of optical parameters for conformance with this ECMA Standard. The critical components of these devices have specific properties defined in this clause.

9.1 Pick Up Head (PUH)

The optical system for measuring the optical parameters is shown in figure 2. It shall be such that the detected light reflected from the entrance surface of the disk is minimized so as not influencing the accuracy of measurement. The combination of the polarizing beam splitter C with the quarter-wave plate D separates the incident optical beam and the beam reflected by the optical disk F. The beam splitter C shall have a p-s intensity/reflectance ratio of at least 100. Optics G generates an astigmatic difference and collimates the light reflected by the recorded layer of the optical disk F for astigmatic focusing and read-out. The position of the quadrant photo detector H shall be adjusted so that the light spot becomes a circle the centre of which coincides with the centre of the quadrant photo detector H when the objective lens is focused on the recorded layer. An example of such a photo detector H is shown in figure 2. The dimensions a and b equal M times 10 µm to 12 µm, where M is the transversal magnification factor from the disk to its conjugate plane near the quadrant photo detector H.



A	Laser diode	F	Optical disk
B	Collimator lens	G	Optics for the astigmatic focusing method
C	Polarizing beam splitter	H	Quadrant photo detector
D	Quarter-wave plate	I_a, I_b, I_c, I_d	Output from the quadrant photo detector
E	Objective lens	J	d.c. coupled amplifier

Figure 2 - Optical system for PUH

The characteristics of the PUH shall be as follows.

Wavelength (λ)	650 nm ± 5 nm
Polarization	circularly polarized light
Polarizing beam splitter	shall be used unless otherwise stated
Numerical aperture	0,60 ± 0,01
Light intensity at the rim of the pupil of the objective lens	60 % to 70 % of the maximum intensity level in radial direction, and over 90 % of the maximum intensity level in tangential direction
Wave front aberration after passing through an ideal substrate of the single layer disk (Thickness : 0,6 mm and index of refraction : 1,56)	0,033 λ rms max.
Normalized detector size on a disk	100 μm^2 ‹ S / M^2 ‹ 144 μm^2 where S is the total surface of the photo detector of the PUH

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE TITLE:

The title has been amended to read as follows.

PICKUP DEVICE FOR RECORDING OR REPRODUCING INFORMATION TO AND FROM A MULTI-LAYERED RECORDING MEDIUM HAVING A PHOTODETECTOR WITH A NORMALIZED DETECTOR SIZE